



UNITED STATES PATENT AND TRADEMARK OFFICE

fl
UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/823,036	04/12/2004	Vani S. Kathula	166538009US	4110
25096	7590	08/17/2005		EXAMINER
PERKINS COIE LLP				DESTA, ELIAS
PATENT-SEA			ART UNIT	PAPER NUMBER
P.O. BOX 1247				2857
SEATTLE, WA 98111-1247				

DATE MAILED: 08/17/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)
	10/823,036	KATHULA ET AL.
	Examiner	Art Unit
	Elias Desta	2857

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) Responsive to communication(s) filed on 12 April 2004.
- 2a) This action is FINAL. 2b) This action is non-final.
- 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) Claim(s) 1-63 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) Claim(s) _____ is/are allowed.
- 6) Claim(s) 1-63 is/are rejected.
- 7) Claim(s) _____ is/are objected to.
- 8) Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) The specification is objected to by the Examiner.
- 10) The drawing(s) filed on 12 April 2004 is/are: a) accepted or b) objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) All b) Some * c) None of:
1. Certified copies of the priority documents have been received.
2. Certified copies of the priority documents have been received in Application No. _____.
3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) Notice of References Cited (PTO-892)
- 2) Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date July 22, 2004.
- 4) Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) Notice of Informal Patent Application (PTO-152)
- 6) Other: _____

Detailed Action

Claim rejection – 35 U.S.C. § 101

1. 35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

Claims 1-63 are nonstatutory because "a method of scoring" appears to be a process that takes and compares the process outputs to the values of the last set of process inputs and storing the results of the comparison, which does not constitute a manipulation of tangible physical objects and result in the object having a different physical structure or attribute.

In summary, statutory process inventions are: a process is statutory if it requires physical acts to be performed outside the computer independent of and following the steps to be performed by a programmed computer, where those acts involve the manipulation of tangible physical objects and result in the object having a different physical attribute or structure. *Diamond v. Diehr*, 450 U.S. at 187, 209 USPQ at 8. Thus, if a process claim includes one or more post-computer process steps that result in a physical transformation outside the computer (beyond merely conveying the direct result of the computer operation), the claim is clearly statutory.

Instances of claims that do not achieve a practical application include:

- Step of "updating alarm limits" found to constitute changing the number value of a variable to represent the result of the calculation (Parker v. Flook, 437 U.S. 584, 585, 198 USPQ 193, 195 (1978));
- Final step of "equating" the process outputs to the values of the last set of process inputs found to constitute storing the result of calculations (In re Gelnovatch, 595 F.2d 32, 41 n.7, 201 USPQ 136, 145 n.7 (CCPA 1979));
- Step of "transmitting electrical signals representing" the result of calculations (In re De Castelet, 562 F.2d 1236, 1244, 195 USPQ 439, 446 (CCPA 1977) ("That the computer is instructed to transmit electrical signals, representing the results of its calculations, does not constitute the type of 'post solution activity' found in Flook, [437 U.S. 584, 198 USPQ 193 (1978)], and does not transform the claim into one for a process merely using an algorithm. The final transmitting step constitutes nothing more than reading out the result of the calculations.")); and
- Step of displaying a calculation as a gray code scale (In re Abele, 684 F.2d 902, 908, 214 USPQ 682, 687 (CCPA 1982)).

In the instant application, a method of scoring does not appear to be used to manipulate a physical object and result in the object having a different physical

attribute or structure. Therefore, as noted above, "a method of scoring" is process that takes and compares the process outputs to the values of the last set of process inputs and storing the results of the comparison.

Claim rejection – 35 U.S.C. § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) The invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claims 1-63 are rejected under 35 U.S.C. 102(b) as anticipated by McDonald et al. (NRC – CNRC Publication, ' Condition Assessment and Rehabilitation of Large Sewers', hereon McDonald).

In reference to 1, 22, 41, 50, 56 and 63. McDonald teaches a method for scoring a defect type of a pipe (see McDonald, page 361, abstract). The method includes:

- Receiving a defect type and an extent for the defect type of a pipe based on at least one defect of the pipe (see McDonald, page 363, last paragraph to page 364 first two paragraphs).
- Providing a base defect type score (light), a maximum defect (severe) type score and a maximum extent (such as gushing or spurting) that is specific to the defect type (see McDonald, page 364, Table 2).

- Calculating a score for the defect type that is between the base defect type score and the maximum defect type score based on the relationship between the extent of the defect type and the maximum extent of the defect type (see *McDonald*, page 365 last paragraph to page 366, Tables 5-8).

Calculating a grade for the pipe that is based on a root-mean-square combination of a highest defect type score of the defect types and an average defect type score of the remaining defect types is considered a statistical evaluation method because *McDonald* in page 368, Summary, end of the 2nd paragraph includes collecting sewer pipe related data which are used for the development and verification of statistical models of assessing sewer deterioration and predicting its remaining service life.

With regard to claim 2: *McDonald* further inherently includes that the relationship is a ratio value of the received extent of the defect type to the maximum extent of the received defect type because *McDonald* in page 366, Table 6 shows that the rating from 0 to 5 as a weighted value.

With regard to claim 3: *McDonald* further teaches that the defect type is a continuous defect type and the maximum extent is segment length (see *McDonald*, page 365, Tables 3 and 4).

With regard to claim 4: *McDonald* further teaches that the received extent of the defect type is the length of the continuous defect of that defect type because

McDonald includes longitudinal, circumferential, and diagonal defective types (see McDonald, page 365, Table 4).

With regard to claims 6 and 8: McDonald inherently includes that the defect type is a point defect type and the maximum extent is a number of occurrences of the defect type because defect prioritization is carried out based on the frequency of the next inspection and condition assessment (see McDonald, page 362, Figure 1 and page 365, page 4).

With regard to claim 7: McDonald further teaches that the maximum extent is the number of sections in the pipe (see McDonald, page 365, Table 3, structural defect types, codes and weights).

With regard to claims 10 and 11: McDonald further teaches that the defect type has a defect category (Defect Type classification, that includes crack), defect form (code), and defect severity (weight) (see McDonald, page 365, Table 3).

With regard to claim 12: McDonald further teaches that the defect forms include longitudinal, circumferential, multiple and spiral (diagonal) (see McDonald, page 365, Tables 3 and 4).

With regard to claim 13: McDonald further teaches that the defect severities different sizes of fractures which are equivalent to hairline or tight type of deformation.

With regard to claim 14: McDonald further teaches that the defect type has defect group based on the size of fractures (see McDonald, age 365, Table 3).

With regard to claim 15: *McDonald* further teaches that the defect groups include structural and maintenance (see *McDonald*, Table 3, Fracture and Surface Damage).

With regard to claim 16: *McDonald* further teaches that the score value ranges from 0-20 for structural related condition and 0-10 scores for service condition rating (see *McDonald*, page 366, Tables 6 and 7). The claimed range is 0-100, which is a matter of choice to assess a given condition of a pipe or sewer. Hence, the range of values used both in the prior art and the claimed inventions are design choices.

With regard to claims 17, 18 46 and 47: *McDonald* further teaches that the base defect type score and the maximum defect type score vary based on material of the pipe because the example given in Fig. 3 of *McDonald* are for metal pipe; however, *McDonald* in page 367 also includes concrete pipes ranging from 750 to 900 mm in diameter.

With regard to claim 19: *McDonald* further teaches that the defect type score, a maximum defect type score (peak score), and maximum extent (condition rating) are provided for each of a plurality of defect types (see *McDonald*, page 367, Table 12).

With regard to claim 20: *McDonald* further teaches that the defect type score is based on multiple defects of that defect type because the inspection frequency

provides impact rating and condition state of various degrees (see McDonald, page 366, Table 366).

With regard to claim 21: McDonald further teaches that the sum of the extent of a defect type is the extent of each defect of that type limited to the maximum extent (total score) for that defect type (such as IL or EL) (see McDonald, page 367, Table 12).

In reference to claims 3, 5, 9, 23-37, 42-45, 48, 49, 51-55 and 57-63: the claimed invention deals with a statistical analysis for scoring a defect type of a pipe. McDonald also carries out an analysis where a sewer condition data is used for the development and verification of statistical models that help to assess sewer deterioration and predict the pipes' remaining service life (see McDonald, page 368, 2nd column, first paragraph under 'Summary')

With regard to claims 38-40: McDonald further teaches that the pipe includes conduits for wastewater and manhole because McDonald uses sewer system to carry wastewater (see McDonald, page 361, Abstract and Introduction, last three lines of the first paragraph).

Conclusion

4. Citation of pertinent prior art:

- McKeage (U.S. Patent 3,877,293) teaches pipe-testing system.

- Ziola et al. (U.S. PAP 2004/0020297) teaches device and method designed for ultrasonically inspecting cylinders for longitudinal and circumferential defects and measure wall thickness.
- Linares et al. (U.S. PAP 2004/0050167) teaches pipe inspection system and methods.
- Collingwood (U.S. Patent 4,285,243) teaches ultrasonic pipe inspection apparatus.
- Braithwaite (U.S. Patent 4,285,242) teaches pipe inspection apparatus.
- Krieg et al. (U.S. Patent 6,848,313) teaches method and device for inspecting pipelines.
- Raval et al. (GIS Publication, 'Sewer Condition Assessment – GIS database without introducing processing errors') teaches a method of assessing a large diameter sewer condition and inspecting 15 to 42 inch-pipes using CCTV.

5. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Elias Desta whose telephone number is (571)-272-2214. The examiner can normally be reached on M-Thu (8:30-7:00).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Marc S. Hoff can be reached on (571)-272-2216. The fax phone numbers for the organization where this application or proceeding is

Application/Control Number: 10/823,036
Art Unit: 2857

Page 10

assigned are (703)-872-9306 for regular communications and for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (571)-272-1750.

Elias Desta
Examiner
Art Unit 2857

-ed

August 1, 2005


MARC S. HOFF
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2800